

## WEST Search History

DATE: Wednesday, December 10, 2003

**Set Name Query**

side by side

**Hit Count Set Name**

result set

*DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; THES=ASSIGNEE;  
PLUR=YES; OP=ADJ*

L9	L3 same filemark	5	L9
L8	13.ab.	121	L8
L7	5543977[uref]	2	L7
L6	L5 not 14	33	L6
L5	L3 same (partition\$ or segment\$ or pars\$)	36	L5
L4	L3 same ((partition\$ or segment\$ or pars\$) with logical data)	3	L4
L3	tape same stor\$3 same (locat\$ or retriev\$ or search\$) same position with (data or datastream or bytestream)	690	L3
L2	L1 same ((partition\$ or segment\$ or pars\$) with logical data)	3	L2
L1	tape same stor\$3 same (locat\$ or retriev\$ or search\$) same position with (data or datastream or bytestream)	654	L1

END OF SEARCH HISTORY

**WEST**

Generate Collection

Print

L6: Entry 10 of 33

File: USPT

Oct 19, 1999

US-PAT-NO: 5969893

DOCUMENT-IDENTIFIER: US 5969893 A

TITLE: Tape pre-formatting with uniform data storage segments selectively mapped to fixed or variable sized independently addressable data storage partitions

DATE-ISSUED: October 19, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Basham; Robert Beverley	Tucson	AZ		
Dahman; Kirby Grant	Tucson	AZ		
Fry; Scott Milton	Tucson	AZ		
Johnson; Steven Douglas	Tucson	AZ		
Wilson; Steven Bennett	Tucson	AZ		

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE	CODE
International Business Machines Corporation	Armonk	NY				02

APPL-NO: 08/ 899042 [PALM]

DATE FILED: July 23, 1997

## PARENT-CASE:

This application is a division of application Ser. No. 08/614,126, filed Mar. 12, 1996, now abandoned.

INT-CL: [06] G11 B 5/09

US-CL-ISSUED: 360/49; 360/48, 360/72.2

US-CL-CURRENT: 360/49; 360/48, 360/72.2

FIELD-OF-SEARCH: 711/4, 711/111, 360/48, 360/49, 360/72.1, 360/72.2, 360/77.12

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected

Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/>	<u>2670212</u>	February 1954	Heller et al.	
<input type="checkbox"/>	<u>4422111</u>	December 1983	Moeller et al.	
<input type="checkbox"/>	<u>5373485</u>	December 1994	Hogan et al.	
<input type="checkbox"/>	<u>5546246</u>	August 1996	Klomp et al.	
<input type="checkbox"/>	<u>5572378</u>	November 1996	Schwarz et al.	360/48
<input type="checkbox"/>	<u>5592342</u>	January 1997	Hall et al.	
<input type="checkbox"/>	<u>5757571</u>	May 1998	Basham et al.	360/72.1

ART-UNIT: 273

PRIMARY-EXAMINER: Faber; Alan

ATTY-AGENT-FIRM: Gray Cary Ware Freidenrich

## ABSTRACT:

Various data storage formats help to efficiently locate, read, and write user data stored on magnetic tape media. A tape is formatted by writing multiple segment-headers, free from any interleaved access of user data. Adjacent segment-headers are spaced by a predetermined interval to define multiple data storage segments. Segment-headers all contain a unique key, which is copied into a key index to identify valid segments. After formatting, normal tape accesses can be performed. Without erasing any old headers or data, a new formatting scheme can be established by writing new segment-headers on the tape. The new segment-headers include a new unique key, replacing the previous key in the key index. Previous segment-headers stored on the tape are ignored, since they lack the updated key. Segments may be selectively grouped to provide independently addressable partitions. Mapping between segments and partitions can use a fixed relationship (e.g. one-to-one), or each partition may be variably sized according to the amount of data to be stored therein. Variable-sized partitions may be automatically padded with a selected number of empty segments. Another feature is flexible-capacity scaling, which distributes an ordered set of device blocks on a multi-track magnetic tape medium. The device blocks are bi-directionally stored in a continuous configuration of multiple adjacent stacked serpentine patterns occupying some or all of the tape. This configuration permits sequential access of all device blocks without advancing the tape medium to skip over regions between adjacent device blocks.

25 Claims, 9 Drawing figures

**WEST**

Generate Collection

Print

L6: Entry 15 of 33

File: USPT

Oct 15, 1996

US-PAT-NO: 5566032

DOCUMENT-IDENTIFIER: US 5566032 A

TITLE: Method for utilizing a longitudinal track on a helical scan tape data storage system to provide a fast search capability

DATE-ISSUED: October 15, 1996

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Cleveland; Brian G.	Boulder	CO		
Dodt; William C.	Broomfield	CO		
Hansen; Douglas C.	Boulder	CO		

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE	CODE
Storage Technology Corporation	Louisville	CO				02

APPL-NO: 08/ 504540 [PALM]

DATE FILED: July 20, 1995

## PARENT-CASE:

This application is a continuation-in-part, of application Ser. No. 08,182,680, filed Jan. 14, 1994, now abandoned which is a continuation of application Ser. No. 07/791,486, filed Nov. 12, 1991, now abandoned.

INT-CL: [06] G11 B 15/18

US-CL-ISSUED: 360/72.2

US-CL-CURRENT: 360/72.2

FIELD-OF-SEARCH: 360/72.2, 360/78.07, 360/14.2, 360/72.1, 360/72.3

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected

Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/>	<u>3789138</u>	January 1974	Terada	360/10.3 X
<input type="checkbox"/>	<u>4591931</u>	May 1986	Baumeister	360/14.3 X
<input type="checkbox"/>	<u>4692819</u>	September 1987	Steele	360/72.2 X
<input type="checkbox"/>	<u>4723181</u>	February 1988	Hickok	360/72.2
<input type="checkbox"/>	<u>4890171</u>	December 1989	Nagao	360/72.2 X
<input type="checkbox"/>	<u>4937689</u>	June 1990	Seaver et al.	360/78.07
<input type="checkbox"/>	<u>4970612</u>	November 1990	Renders et al.	360/74.3 X
<input type="checkbox"/>	<u>5079651</u>	January 1992	Tsuchida et al.	360/72.2
<input type="checkbox"/>	<u>5144500</u>	September 1992	Odaka et al.	360/32
<input type="checkbox"/>	<u>5155811</u>	October 1992	Dean et al.	360/72.2 X
<input type="checkbox"/>	<u>5179479</u>	January 1993	Ahn	360/72.1

## OTHER PUBLICATIONS

"DC Motors Speed Controls Servo Systems" by Robbins & Mers/Electro-Craft, 1988, pp. 5-66.

ART-UNIT: 253

PRIMARY-EXAMINER: Psitos; Aristotelis

ASSISTANT-EXAMINER: Wilson; James T.

ATTY-AGENT-FIRM: Duft, Graziano & Forest, P.C.

## ABSTRACT:

A novel method is disclosed for performing a high speed search for a selected data block or data file utilizing any one of several presently existing helical scan tape formats which utilize, in addition to the helically scanned tracks, one or more longitudinal tracks for recording indexing information indicative of the location of data blocks and file marks stored on the associated helical tracks. Data file location information is written to a header area on a series of helical tracks and to one (or more) of the longitudinal tracks when a data block or a file mark is written to a tape. A high speed search for a desired data block or data file can then be performed using this track location information.

4 Claims, 15 Drawing figures

## WEST

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L6: Entry 17 of 33

File: USPT

Aug 6, 1996

US-PAT-NO: 5543977

DOCUMENT-IDENTIFIER: US 5543977 A

TITLE: Data recording system having improved longitudinal and helical search capability

DATE-ISSUED: August 6, 1996

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Shih; Lionel C.	San Jose	CA		
Holter; Jerry E.	Freemont	CA		

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Ampex Systems Corporation	Redwood City	CA			02

APPL-NO: 07/ 843740 [PALM]

DATE FILED: February 28, 1992

INT-CL: [06] G11 B 5/09, G11 B 15/18

US-CL-ISSUED: 360/48; 360/39, 360/53, 360/72.2

US-CL-CURRENT: 360/48; 360/39, 360/53, 360/72.2

FIELD-OF-SEARCH: 360/48, 360/49, 360/53, 360/72.2, 360/39, 371/6, 371/7

PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/>	Re31311	July 1983	Miller	360/40
<input type="checkbox"/>	<u>5091505</u>	February 1992	Odaka et al.	360/48

## FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
10406188	January 1991	EP	360/72.2
20452854	October 1991	EP	
0459041	December 1991	EP	
61-133082	June 1986	JP	

## OTHER PUBLICATIONS

Proposed SMPTE Standard for Television Digital Component and Composite Recording,  
SMPTE Journal, Mar. 1992.  
John Watkinson, The D-2 Digital Video Recorder, 1990 pp. 143-183.

ART-UNIT: 254

PRIMARY-EXAMINER: Hajec; Donald

ASSISTANT-EXAMINER: Forbus, Jr.; T. N.

ATTY-AGENT-FIRM: Mesaros; John G. Barbas; Charles J. Greer; Roger

ABSTRACT:

A helical type tape recording and reproducing system records blocks of user data-of predetermined size by reformatting the user data blocks into physical blocks that are recorded on tape. The system format includes helical tracks in which user data blocks are recorded and longitudinal tracks for storing address information relating to the physical layout of the tape and to the content of the recording in the helical area. The system includes a partition access bookkeeping feature that stores information relating to locations at which searching or recording has been performed during a current load of a tape in the system, which is useful in accomplishing efficient searching for user data recorded on the tape. The present invention is directed to system search capabilities, including longitudinal searching along the tape and searching in the helical recording area of the tape.

22 Claims, 36 Drawing figures

**WEST**☐ **Generate Collection** **Print**

L6: Entry 22 of 33

File: USPT

Feb 7, 1995

US-PAT-NO: 5388016

DOCUMENT-IDENTIFIER: US 5388016 A

TITLE: Magnetic tape data management method and apparatus

DATE-ISSUED: February 7, 1995

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kanai; Sadasaburoh	Yokohama			JP
Kitajima; Hiroyuki	Yokohama			JP
Nishimura; Toshifumi	Minamiashigara			JP
Kakuse; Katsuharu	Hadamo			JP
Kosuge; Minoru	Odawara			JP

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Hitachi, Ltd.	Tokyo			JP	03

APPL-NO: 07/ 843213 [PALM]

DATE FILED: February 28, 1992

## FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	3-069197	March 8, 1991

INT-CL: [06] G11 B 15/18

US-CL-ISSUED: 360/72.1; 360/72.3

US-CL-CURRENT: 360/72.1; 360/72.2, 360/72.3

FIELD-OF-SEARCH: 360/72.1, 360/72.2, 360/72.3, 360/27, 360/31, 360/33.1

PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

☐ **Search Selected**☐ **Search ALL**

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/>	<u>4951276</u>	August 1990	Sakaegi et al.	360/72.1
<input type="checkbox"/>	<u>5038231</u>	August 1991	Harigaya et al.	360/72.2
<input type="checkbox"/>	<u>5081548</u>	January 1992	Inazawa et al.	360/72.2

## FOREIGN PATENT DOCUMENTS



FOREIGN-PAT-NO  
55-58862

PUBN-DATE  
January 1980

COUNTRY  
JP

US-CL

#### OTHER PUBLICATIONS

Tada and Fushiki: "Format for using DAT for recording code data, a proposal made jointly by Sony and Hewlett-Packard", Nikkei Electronics, Mar. 7, 1988, No. 442, pp. 145-148.

Fushiki: "IG-byte magnetic tape subsystem for external storage using DAT tape", Nikkei Electronics, Jun. 15, 1987, No. 423, p. 77.

Suzuki, Oyama and Yoshizawa: "Next-generation VTR to use digital recording", Nikkei Electronics, May 30, 1988, No. 448, pp. 111-137.

ART-UNIT: 341

PRIMARY-EXAMINER: Look; Edward K.

ASSISTANT-EXAMINER: Verdier; Christopher

ATTY-AGENT-FIRM: Fay, Sharpe, Beall, Fagan, Minnich & McKee

#### ABSTRACT:

A magnetic tape data management method and apparatus is described that reduces the access time for updating and referring to directory data. At the time of accessing data on a magnetic tape loaded in a magnetic tape subsystem, directory data for the magnetic tape is, in response to the completion of the processing of data, recorded in a region located near the place at which the magnetic tape head is positioned at that time, said region constituting a directory data region (DDR). Further, a directory data memory for recording directory data from the magnetic tape is provided in the magnetic tape subsystem, remote from the tape. At the time of accessing data on the magnetic tape loaded in the magnetic tape subsystem, directory data for the magnetic tape processing is, in response to completion of the processing of data, recorded in the directory data memory in the magnetic tape subsystem.

51 Claims, 11 Drawing figures

**WEST**

Generate Collection

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L7: Entry 1 of 2

File: USPT

Dec 3, 2002

US-PAT-NO: 6490114

DOCUMENT-IDENTIFIER: US 6490114 B1

TITLE: Method of synchronizing physical and logical positions in a magnetic tape recording device

DATE-ISSUED: December 3, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gill; Richard A.	Arvada	CO		
Wyman; Robert Olin	Longmont	CO		
Baron; Benjamin Joseph	Boulder	CO		
Fout; Randy Allen	Lyons	CO		

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Storage Technology Corporation	Louisville	CO			02

APPL-NO: 09/ 365373 [PALM]

DATE FILED: July 30, 1999

INT-CL: [07] G11 B 15/18, G11 B 19/02

US-CL-ISSUED: 360/72.2; 360/69, 360/71

US-CL-CURRENT: 360/72.2; 360/69, 360/71

FIELD-OF-SEARCH: 360/71, 360/72.1, 360/72.2, 360/72.3, 360/69

PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

Search Selected

Search ALL

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/> <u>5388016</u>	February 1995	Kanai et al.	360/72.1
<input type="checkbox"/> <u>5543977</u>	August 1996	Shih et al.	360/48
<input type="checkbox"/> <u>5889916</u>	March 1999	Kimura et al.	386/52

## FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0 482 297	April 1992	EP	
0 509 637	October 1992	EP	
02 195575	October 1990	JP	

ART-UNIT: 2651

PRIMARY-EXAMINER: Snizek; Andrew L.

ATTY-AGENT-FIRM: Brooks & Kushman P.C.

ABSTRACT:

An improved tape storage device having information for converting longitudinal physical positions written in a medium to logical positions used by a tape drive. The conversion information, an offset and an optional maximum physical position value, are stored in one or more locations in the tape storage device. Methods of operating the tape drive are disclosed to determine and store the conversion information in the tape storage device. Another method of operation enables the tape drive to read the conversion information and convert the physical positions to logical positions. The method works for both center loading and end loading medium. Possible numeric rollover of the physical positions is detected by one of several methods including the step values between adjacent physical positions, comparing the logical positions with an upper and lower boundary, and generating a lookup table where the rollover is represented by a wraparound between the top and bottom of the table.

22 Claims, 9 Drawing figures

**WEST**

Generate Collection

Print

L9: Entry 3 of 5

File: USPT

Apr 8, 2003

US-PAT-NO: 6546384

DOCUMENT-IDENTIFIER: US 6546384 B2

TITLE: Method of determining and storing indexing data on a sequential data storage medium for supporting random access of data files stored on the medium

DATE-ISSUED: April 8, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Shaath; Kamel	Kanata			CA
Freeman; Richard	Ottawa			CA

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Kom Networks Inc.	Ottawa			CA	03

APPL-NO: 10/ 067916 [PALM]

DATE FILED: February 8, 2002

## PARENT-CASE:

This application is a divisional application of Ser. No. 09/267,788, now U.S. Pat. No. 6,349,294.

## FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
CA	2244626	July 31, 1998

INT-CL: [07] G06 F 12/08

US-CL-ISSUED: 707/2; 707/3, 707/100, 711/112, 711/117, 711/122, 711/218

US-CL-CURRENT: 707/2; 707/100, 707/3, 711/112, 711/117, 711/122, 711/218

FIELD-OF-SEARCH: 707/2, 707/3, 707/100, 711/112, 711/117, 711/122, 711/218

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected

Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/>	<u>3913074</u>	October 1975	Homberg et al.	
<input type="checkbox"/>	<u>4571700</u>	February 1986	Emry, Jr. et al.	
<input type="checkbox"/>	<u>4633391</u>	December 1986	Rundell	
<input type="checkbox"/>	<u>4633393</u>	December 1986	Rundell	
<input type="checkbox"/>	<u>4958314</u>	September 1990	Imai et al.	
<input type="checkbox"/>	<u>4975898</u>	December 1990	Yoshida	
<input type="checkbox"/>	<u>5204958</u>	April 1993	Cheng et al.	
<input type="checkbox"/>	<u>5214627</u>	May 1993	Nakashima et al.	
<input type="checkbox"/>	<u>5481694</u>	January 1996	Chao et al.	
<input type="checkbox"/>	<u>5537636</u>	July 1996	Uchida et al.	
<input type="checkbox"/>	<u>5708650</u>	January 1998	Nakashima et al.	
<input type="checkbox"/>	<u>5717683</u>	February 1998	Yoshimoto et al.	
<input type="checkbox"/>	<u>5737145</u>	April 1998	Jung	
<input type="checkbox"/>	<u>5745890</u>	April 1998	Burrows	
<input type="checkbox"/>	<u>5825728</u>	October 1998	Yoshimoto et al.	
<input type="checkbox"/>	<u>5845274</u>	December 1998	Chadha	
<input type="checkbox"/>	<u>5850566</u>	December 1998	Solan et al.	
<input type="checkbox"/>	<u>6343341</u>	January 2002	Cabrera et al.	711/111
<input type="checkbox"/>	<u>6374232</u>	April 2002	Dageville et al.	707/2

ART-UNIT: 2177

PRIMARY-EXAMINER: Homere; Jean R.

ATTY-AGENT-FIRM: Venable Albrecht; Ralph F.

## ABSTRACT:

A format structure for storing retrievable data on a sequential data storage medium, which includes in an exemplary embodiment a start field for indicating the start of a data file, an index field for storing indexing data respecting the data file, and a data field. Stored encoded data on the storage medium can use the last file written on the storage medium to create indexing data that can be stored alongside the data files as they written so that each sequential data storage medium remains fully indexed.

16 Claims, 18 Drawing figures

**WEST**

Generate Collection

Print

L9: Entry 3 of 5

File: USPT

Apr 8, 2003

DOCUMENT-IDENTIFIER: US 6546384 B2

TITLE: Method of determining and storing indexing data on a sequential data storage medium for supporting random access of data files stored on the medium

Detailed Description Text (39):

FIG. 3d illustrates the portion of a tape containing the index field of a file having a UPK of "k" added to the tape at tape position 0003 immediately following the data for file "s". As before, the first step was to read the lowest level block in the index field of the last file stored on the tape into memory, read the lowest level block, locate the target entry in that block, and insert a new entry immediately following the target entry and then, if a block split operation is not required, write the filemark, index field and data to the tape. The target entry in this case yielded the first entry, the entry for file "a" in the two entry, single level Z level block. A new entry having entry key "k", block indicator " " and entry address 0003 was inserted into the block after the target entry and before the entry for file "s". The index field in memory for the new file thus had a Z level, three entries, one for each of files "a", "k" and "s", each having a block designator of a, with respective entry addresses of 0001, 0003, and 0002. A filemark, this index field and the data for file "k" were written to tape at the end of the data for file "s".

**WEST****End of Result Set**☐ **Generate Collection** **Print**

L9: Entry 5 of 5

File: USPT

Feb 10, 1998

US-PAT-NO: 5717951

DOCUMENT-IDENTIFIER: US 5717951 A

TITLE: Method for storing and retrieving information on a magnetic storage medium via data blocks of variable sizes

DATE-ISSUED: February 10, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yabumoto; Kan W.	Naperville	IL	60540	

APPL-NO: 08/ 511721 [PALM]

DATE FILED: August 7, 1995

INT-CL: [06] G06 F 17/30

US-CL-ISSUED: 395/831; 395/611

US-CL-CURRENT: 710/11; 707/100

FIELD-OF-SEARCH: 395/601, 395/602, 395/616, 395/617, 395/618, 395/619, 395/620, 395/621, 395/622, 395/427, 395/428, 395/438, 395/439, 395/440, 395/441, 395/410, 395/411, 395/412, 395/413

PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

**Search Selected****Search ALL**

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/>	<u>4969055</u>	November 1990	Oberjatzas et al.	360/32
<input type="checkbox"/>	<u>4972417</u>	November 1990	Sako et al.	371/37.4
<input type="checkbox"/>	<u>5113512</u>	May 1992	Miki et al.	395/416
<input type="checkbox"/>	<u>5274772</u>	December 1993	Dunn et al.	395/831
<input type="checkbox"/>	<u>5327535</u>	July 1994	Ogata et al.	395/440
<input type="checkbox"/>	<u>5335119</u>	August 1994	Shih et al.	360/53
<input type="checkbox"/>	<u>5384666</u>	January 1995	Kanota et al.	360/32
<input type="checkbox"/>	<u>5384673</u>	January 1995	Yoshioka et al.	360/72.2
<input type="checkbox"/>	<u>5414570</u>	May 1995	Fry et al.	360/48
<input type="checkbox"/>	<u>5485606</u>	January 1996	Midgdey et al.	395/610

ART-UNIT: 237

PRIMARY-EXAMINER: Black; Thomas G.

ASSISTANT-EXAMINER: Ho; Ruay Lian

ATTY-AGENT-FIRM: Bartholomew; Darin E.

ABSTRACT:

A method for storing and retrieving information on a magnetic storage medium, such as magnetic tape, organizes files into data blocks of variable encoded block sizes. The encoded block sizes indicate file boundaries of files, intrablock data organization and/or interblock data organization to facilitate data retrieval. For example, if encoded block sizes indicate file boundaries, then filemarks are not needed to separate files from each other. During an encoding process, data blocks are assigned corresponding data formats and block sizes are preferably quantized to equal distinctive integer multiples of an encoding constant. Decoding is accomplished by performing a modulo function on the quantized block size to identify corresponding data formats assigned to the data blocks. One practical application of the method of storage and retrieval is recovery of a corrupt or a missing file directory, which references files stored on the magnetic storage medium.

86 Claims, 32 Drawing figures